Detailed Action

CONNECTION OPTIMIZATION FOR COMMUNICATIONS IN MULTIPLE ACCESS ENVIRONMENT
Response to Remarks/Arguments

1.   Claims 1 – 56, are pending in the application with claims 15 – 28 cancelled and claims 43 – 56

new.

2.   Applicant's arguments see Remarks, filed on 9/26/2008, with respect to 1 – 14 and 42 – 43 have

been fully considered and are persuasive and the rejection of the claims 1 – 14 has been withdrawn.

3.   In examining claims 43 – 56, Examiner found the preamble of the claims to reject able under 35

USC § 112; 1st Paragraph. The Examiner contacted the Applicant's attorney, Douglas Goldhush, and the

following amendment to these claims were agreed to;

Examiner's Amendment

Please amend claims 43 – 56 in this application as follows;

43. (Amended) A ~~computer program product embodied on a~~ computer readable storage medium, the

computer ~~program product being configured to control a processor to~~ <u>readable storage medium being</u>

<u>configured to store instructions for a processor to</u> perform a method, the method comprising

          starting an application level communication connection setup procedure between a

mobile node and a correspondent node via a communication subsystem infrastructure of a packet

based communication network by transmitting and receiving application level signaling messages

between the correspondent node and the mobile node;

          transmitting, during the application level communication connection setup procedure, a

trigger signal from an application layer to a network layer in the mobile node wherein the trigger

signal comprises the address of the correspondent node; and

          performing, in response to the trigger signal, a network level route optimization

procedure during the application level communication connection setup procedure.

44. (Amended) The ~~computer program product~~ computer readable storage medium according to claim 43,

wherein the packet based communication network comprises wireless communication network parts.

45. (Amended) The ~~computer program product~~ computer readable storage medium according to claim 43,

wherein the network level is based on an internet protocol based transport protocol.

46. (Amended) The ~~computer program product~~ computer readable storage medium according to claim 45,

wherein the address of the correspondent node is an internet protocol address.

47. (Amended) The ~~computer program product~~ computer readable storage medium according to claim 45,

wherein the Internet protocol based transport protocol uses mobile internet protocol version 6.

48. (Amended) The ~~computer program product~~ computer readable storage medium according to claim 47,

wherein the communication subsystem infrastructure further includes a home agent.

49. (Amended) The ~~computer program product~~ computer readable storage medium according to claim 43,

wherein the application level communication connection setup procedure is executed by using the session

initiation protocol wherein the address of the correspondent node is provided to the mobile node in a

session description protocol descriptor.

50. (Amended) The ~~computer program product~~ computer readable storage medium according to claim 43,

wherein the network level route optimization procedure comprises a binding update procedure in which

the care-of-address of the mobile node is transmitted to the correspondent node.

51. (Amended) The ~~computer program product~~ computer readable storage medium according to claim 43, wherein performing the network level route optimization procedure comprises initializing a network level route optimization on the mobile node side.

52. (Amended) The ~~computer program product~~ computer readable storage medium according to claim 51, wherein performing the network level route optimization procedure comprises initializing a network level route optimization on the correspondent node side when an network level route optimization signaling from the mobile node is received.

53. (Amended) The ~~computer program product~~ computer readable storage medium according to claim 43, wherein performing the network level route optimization procedure is completed before the application level communication connection setup procedure is completed.

54(Amended) The ~~computer program product~~ computer readable storage medium according to claim 43, wherein transmitting the trigger signal is ,performed via an interface provided between the application layer and a network level module in the network layer of the mobile node.

55. (Amended) The ~~computer program product~~ computer readable storage medium according to claim 54, wherein the interface is implemented by an application programming interface.

56. (Amended) The ~~computer program product~~ computer readable storage medium according to claim 54, the method further comprising:

transmitting an acknowledgment from the network level module to the application layer after the trigger signal comprising the address of the correspondent node is received.

Allowable Subject Matter

4.   Claim 1 in the application recites;

(1). (Previously presented) 1. A method of optimizing an establishment of a communication connection between a mobile node and a correspondent node in a packet based communication network which includes a plurality of call session control function elements and a server of the mobile node constituting a communication subsystem infrastructure, the method comprising the steps of:

starting an application level communication connection setup procedure between the mobile node and the correspondent node via the communication subsystem infrastructure by transmitting and receiving application level signaling messages between the correspondent node and the mobile node;

transmitting, during the application level communication connection setup procedure, a trigger signal from an application layer to a network layer in the mobile node wherein the trigger signal comprises the address of the correspondent node;

and performing, in response to the trigger signal, a network level route optimization procedure during the application level communication connection setup procedure.

5.   During examination, a prior art search focused on the element; 'transmitting, *during* (Examiner's italics) the application level communication connection setup procedure, a trigger signal from an application layer to a network layer in the mobile node wherein the trigger signal comprises the address of the correspondent node;'

6.   Examiner, in the first action, cited Takeda et al (U.S. Patent 7,286,520) to teach this element, however Takeda did not antedate the priority date of the present application. In a subsequent search, Examiner found inter-layer protocol communication taught by a genre of publications related to cross-(protocol) layer optimization. For example, Vaidyanathan (U.S. Patent 7,016,668), taught inter-layer protocol communication facilitated by a intelligent controller in the context of Software Defined Radio Technology, where feedback of information from one layer was used to regulate the operations of a second layer.

7.   However none of the references, including Vaidyanathan, were found to teach transmitting from

an application layer to a network layer a trigger signal *during* the application level communication

connection setup procedure, wherein the trigger signal comprises the address of the correspondent node.

8.   In consideration of this and search of like subject matter in the examination process, the Examiner

finds claims to 1 – 14 and 42 – 43 (amended) to be in condition for allowance.

Conclusion

9.   Any inquiry concerning this communication or earlier communications from the examiner should

be directed to Henry Baron whose telephone number is (571) 270-1748. The examiner can normally be

reached on 7:30 AM to 5:00 PM E.S.T. Monday to Friday.

10.   If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor,

Seema Rao can be reached on (571) 272-3174. The fax phone number for the organization where this

application or proceeding is assigned is 571-273-8300.

11.   Information regarding the status of an application may be obtained from the Patent Application

Information Retrieval (PAIR) system. Status information for published applications may be obtained

from either Private PAIR or Public PAIR. Status information for unpublished applications is available

through Private PAIR only. For more information about the PAIR system, see http://pair-

direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic

Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer

Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR

CANADA) or 571-272-1000.

/H. B./
Examiner, Art Unit 2416
HB

/Brenda Pham/

Primary Examiner, Art Unit 2416